UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MARCH 10, 1987

MEMORANDUM

SUBJECT: RCRA "Special Study" --Waste Definitions-- Sites That Require Additional Consideration Prior to NPL Proposal Under the Superfund Amendments and Reauthorization Act

FROM: Henry L. Longest II
Director, Office of Emergency and Remedial Response

TO: Director, Waste Management Division
Regions I, IV, VII, and VII
Director, Emergency and Remedial Response Division
Region II
Director, Hazardous Waste Management Division
Regions III and VI
Director, Toxic and Waste Management Division
Region IX
Director, Hazardous Waste Division
Region X

The purposes of this memo are to discuss Sections 105(g) and 125 of the Superfund Amendments and Reauthorization Act of l986 (SARA) and, to the extent now possible, to outline the scope of these provisions by providing appropriate definitions. Both of these sections require that, until the Hazard Ranking System (HRS) is revised, the Agency evaluate additional data for sites at which "special wastes" as defined under the Resource Conservation and Recovery Act (RCRA), are present in significant quantities before these sites are proposed for the NPL.

This memo does not address the specific data and information needed to fulfill the additional requirements of Sections 105(g) and 125. We are in the process of developing guidance that will explain both the data needs and how the Agency will use information to list special waste sites. We expect to issue this guidance in March/April 1987. Until it is available, we recommend that the Regions continue to work on developing HRS packages for such sites with the understanding that additional information acquisition may be necessary in the future.

It must be understood that, with only minor exceptions, neither RCRA nor CERCLA includes precise definitions of the wastes covered by these provisions and the interpretations given in this memo could change at some future point. It is unlikely, however, that such changes will occur prior to the promulgation of the HRS.

FaxBack# 11226

The information contained below has been reviewed by all Offices within OSWER and by the Office of General Counsel.

SARA SECTION 105(g)

Section 105(g) of SARA applies to sites that, (1) were not on or proposed for the NPL as of October 17, 1986, and (2) contain significant quantities of "special study" wastes as defined under Sections 3001(b) (2), 3001(b) (3) (A) (ii), and 3001(b) (3) (A) (iii) of RCRA. For these sites, SARA requires that the following information be considered prior to proposal for the NPL:

(A) the extent to which the Hazard Ranking System (HRS) score for the facility is affected by the presence of the special study waste at, or released from, the facility.

(B) available information as to the quantity, toxicity, and concentration of hazardous substances that are constituents of any special study waste at, or released from the facility; the extent of or potential for release of such hazardous constituents; the exposure or potential exposure to human population and the environment, and the degree of hazard to human health or the environment posed by the release of such hazardous constituents at the facility.

The relevant paragraphs of RCRA are defined below:

(1) RCRA Section 3001(b) (2) (A): "Drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil or natural gas or geothermal energy.

The Office of Solid Waste drafted a technical report on wastes from the exploration, development and production of crude oil, natural gas, and geothermal energy, dated October 31, 1986. In this report, EPA made some tentative determinations as to which wastes are subject to the oil and gas exemption. To make these determinations, EPA relied on RCRA's language and the legislative history to develop tentative criteria for determining which wastes are included. These criteria appear below:

1. Only waste streams intrinsic to the exploration for, or development and production of, crude oil, natural gas, or geothermal energy are exempt. Waste streams generated at oil, gas, and geothermal energy facilities that are not uniquely associated with exploration, development, or production activities are not exempt.

2. Exempt wastes must be associated with "extraction" processes which include measures (1) to remove oil, natural gas, or geothermal energy from the ground or (2) to remove impurities from such substances, provided that the purification process is an integral part of normal field operations.

3. The proximity of waste streams to primary field operation is a factor in determining the scope of the exemption. Process operations that are distant from the exploration, development or production operations may not be subject to exemption.

4. Wastes associated with transportation are not exempt. The point of custody transfer, or of production separation and dehydration, may be used as evidence in making this determination.

In its report, the Agency noted that these determinations may not address all exempted wastes and solicited comment on its findings. The following wastes were tentatively classified as exempt under this section (i.e., special study wastes):

Oil and Gas

- drilling media
- drill cuttings
- well completion, treatment, and stimulation fluids
- packing fluids
- produced waters
- produced sand
- workover fluids
- field tank bottoms
- waste crude oil and waste gases from field operations
- waste triethylene glycol used in field operations

Geothermal Energy

- drilling media and cuttings
- reinjection well fluid wastes
- precipitated solids from brine effluent
- settling pond wastes
- piping scale and flash tank solids (except for those associated with electrical power generation)

Further information on oil, gas, and geothermal wastes can be found in the 10/31/86 report.

(2) RCRA Section 3001(b) (3) (A) (iii): "Cement kiln dust waste"

This category of wastes is fairly self-explanatory and has not been controversial. Cement kiln dust is the material that goes up the stack as a result of fuel combustion and the commingling of the cement additives. The dust is collected either in a baghouse or in an electrostatic precipitator. The collected dust is a high volume waste that is strongly alkaline. Cement kiln dust is usually disposed of in on-site landfills or land reclamation.

(3) RCRA Section 3001(b) (3) (A) (ii): "Solid waste from the extraction, beneficiation, , and processing of ores and minerals, including phosphate rock and overburden from the mining of uranium ore"

"Extraction," in the context of RCRA, refers to the beginning or front-end operations associated with mining, including the removal of overburden in surface mines, quarrying, and other forms of collecting raw materials that contain economic concentrations of elements (ore). "Overburden" is the general term for wastes resulting from extraction operations in surface mines. Other examples of extraction operations are: dredging of placer deposits or beach sands, cutting or blasting whole rock from surface quarries, and removal of rock to construct underground tunnels. It should be noted that

one form of extraction, in-situ mining was excluded from RCRA solid waste coverage in 40 CFR 261.4(a) (5), and is not, therefore, a "special study waste."

"Beneficiation" refers to processes used to concentrate the extracted ores or minerals. This can be accomplished with simple physical processes such as crushing, screening, and washing. Beneficiation can also involve chemical processes such as leaching of metallic elements (e.g., copper, silver, gold) from ore or mill tailings using acid or cyanide solutions.

Industry uses the term "milling" to refer to most of the above operations. This term comes from the most common process in beneficiation, that of breaking, crushing, grinding, and screening the rock in large rotating rod and ball mills. Mill tailings are the most common wastes from beneficiation.

For more information on the above two categories of mining waste, the reader is referred to, "Report to Congress: Wastes from the Extraction and Beneficiation of Metallic Ores, Phosphate Rock, Asbestos, Overburden from Uranium Mining, and Oil Shale." (EPA/530-SW-85-033, December 1985)

"Processing" generally includes operations that further refine or purify the product being mined beyond the beneficiation step. "Processing" is the term associated with the RCRA mining waste exclusion that has caused the most confusion and regulatory uncertainty. In 1980, EPA stated in the preamble to the hazardous waste standards that the term "processing' included the smelting and refining of ores and minerals. The Agency stated at that time, however, that it was not sure that this interpretation was consistent with the intent of Congress and that the issue would be addressed in future rulemaking. On October 2, 1985, the Agency proposed to retract its inclusion of smelting and refining in the mining waste exclusion, with the exception of a few large volume processing wastes (see Attachment I). The proposed rule was withdrawn on October 9, 1986 (see Attachment II).

At the present time, therefore, the term "processing" is broadly interpreted to include most post-beneficiation processes, specifically including smelting and refining of ores and minerals. It may be difficult to determine at what point processing ends and fabrication or manufacturing begins. Generally, wastes that result from combining the mineral product with another material (e.g., alloying) or from fabrication (a change in shape that does not cause a change in chemical composition) are not "special study" (i.e. "processing") wastes, although exceptions may exist.

SARA SECTION 125

This section applies to facilities that were neither on nor proposed for the NPL on the date of enactment of SARA and which contain "substantial volumes" of waste described in Section 3001(b)(3)(A)(i) of RCRA. Until the HRS is revised, these sites may not be included on the NPL "on the basis of an evaluation made principally on the volume of such waste and not on the concentration of the hazardous constituents of such waste."

RCRA Section 3001(b)(3)(A)(i): "Fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels."

The temporary RCRA exemption for fossil fuel combustion wastes noted above includes all fly ash, bottom ash, boiler slag. and flue gas emission control waste resulting not only from the combustion of coal, but also from combustion of oil, natural gas, and coke. The fossil fuel component must be over 50% of fuel mix for the exemption to apply. These waste materials are included whether generated by electric utility generating plants or by industrial and commercial facilities.

When fossil fuels are burned, the noncombustible materials are converted to ash. The proportion of noncombustible material in coal is referred to as the ash content. (Petroleum also contains ash, but in far smaller quantities). The smaller ash particles entrained by the flue gas are referred to as fly ash and are produced in varying degrees by all plants. Larger ash particles that settle on the bottom of the boiler will form either bottom ash or boiler slag, depending on the furnace design. Another waste product called FGD (scrubber) sludge, is generated when sulfur dioxide (formed from the burning of sulfur present in the coal) is removed from other flue gases. This removal process, which is required by environmental regulations for some power plants, is usually accomplished with a flue gas desulfurization (FGD, or scrubber) system.

Although these definitions are rather broad, we hope that this information will assist you in identifying sites that may fall under the relevant sections of SARA. We also solicit your input on the scope of the terms contained in this memo and will modify them in the future if appropriate.

We appreciate your assistance in this matter and expect to work closely with your staff to resolve any problems. If your staff has site specific questions, they should call Ms. Ann Sarno, of my staff, at FTS-382-4485.

cc: Dennis Huebner, Region I
John Czapor, Region II
Bob Wayland, Region III
Richard Stonebraker, Region IV
Richard Bartelt, Region V
Robert Courson, Region X

NPL Coordinators, Regions I-X

bcc: Meg Silver, OGC
Susan Schmedes, OGC
Ephraim King, OGC
Ellen Siegler, OWPE
Ginny Steiner, OWPE
Truett DeGeare, OSW
Dan Derkics, OSW
Rob Walline, Region VIII

Bob Hannesschlager, Region VI
Robert Morby, Region VII
Bill Geise, Region VIII
Keith Takata, Region IX